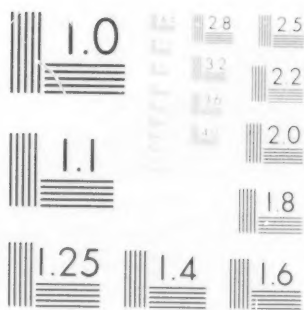


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ABSTRACT

The possible sponsorship/career success relationship among university male and female faculty is investigated. Focus is on the effects this sponsorship process has in later career success as measured by publication rate, grants received, rate of professional collaboration, and professional network involvement. A sample of 133 faculty members (64 women and 69 men) from nine universities were surveyed. The respondent's teaching discipline and rank, age, marital status, and graduate school are provided. Results show that women faculty publish somewhat less than men faculty and that women are not included in the networks that lead to publishing to the extent that men are; however, women faculty are as successful as their male counterparts in collaboration and in grants received over three years. (SPG)

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WOMEN IN ACADEMIA: FACULTY SPONSORSHIP, INFORMAL SOCIAL STRUCTURES AND CAREER SUCCESS

Introduction

The Woman Question continues as an issue for social discussion; why so few women participating in high prestige, high paying occupations, including the professoriate and academic administration? Two explanations have been offered. One focuses on the psychic and biological differences between the sexes (Bardwick, 1971; Bernard, 1967). Generally this camp is in the "blame the victim" school of thought and if one thinks of the concept in relation to blacks as well as women, the sociological literature endorsing this position is clearer. Women tend to be described as basically expressive in nature, non-aggressive, and dependent. The single most disseminated study in this line from the 1960's was Matina Horner's research on why women were stuck in their lives: women were cursed with the motive to avoid success. This explanation had an extremely negative effect on women's aspirations toward achievement in careers. It also kept the focus on women rather than on the structure of the professions, or the power structure within institutions, or on the opportunity structure within the professions.

In the 70's a new direction is evident. A second explanation is emerging which focuses the analysis on the structure of the professions, social stratification, and economic

explanations of role differentiation between the sexes (Kanter, 1975; Epstein, 1970; Mitchell, 1971).

This explanation is more fruitful since women are quite capable now of recognizing their socialized limitations; what they need to know is how institutions work in both their formal structure and in their informal management practices. What women need is knowledge, tactics and strategy for moving into technical, managerial, and professional roles. What kind of support is necessary for success and how does one get it?

The intent of my study is to investigate the possible sponsorship/career success relationship among university male and female faculty. More specifically, since sponsorship is a form of support by believing in the younger person and giving the student training, the question is: What effects does this process have in later career success as measured by publication rate, grants received, rate of professional collaboration, and professional network involvement.

Theoretical Framework

Sponsorship, or having a mentor, is viewed in this study as part of one's professional support network. Building on the work of Granovetter (1973) and Hamilton (1977), relationships may be construed in terms of levels of influence and impact. Each level can be thought of as a network, that is, an informal arrangement of individuals or groups connected by a certain type of relationship with a particular content, (Figure 1).

All four network levels influence a woman's decisions

Figure 1: Differentiating Social Influence Networks and Related Communication Patterns for Adult Professionals.

<u>Network Level</u>	<u>Influence Potential</u>	<u>Communication Frequency Patterns</u>
Level I: <u>PERSONAL NETWORK.</u> Family/friends. Characterized by extreme homophily. Relationship: Personal	High	Twice a week or more often.
Level II: <u>FORMAL SUPPORT NETWORK.</u> Functionally related to official roles, professional ties. Shares values. Moderate homophily. Relationship: Professional	High	Less than twice a week; more than once a year.
Level III: <u>BOUNDARY SPANNING GROUPS & INSTITUTIONS.</u> Socialization forces such as church, family, school and media. Regulates status quo. Relationship: Low conflict	Moderate	No direct communication. Ubiquitous influence.
Level IV: <u>AVOIDANCE NETWORK.</u> Opposition forces and persons. Characterized by hostility. Relationship: High conflict.	Low	As infrequent as possible.

during her life cycle vis a vis career choices. The content of Level I and Level II become important in terms of career success once a woman has made the decision to pursue professional goals and enter graduate school. It is in graduate school, it is hypothesized, that one's Level II network begins to form often through the training and encouragement given by one's major professor who becomes a mentor or sponsor.

The Level I network, one's personal or strong tie network, with high influence potential, are those friends/family that one interacts with twice a week or more often. Since these are time consuming relationships, it can be inferred that the number of strong tie relationships reduces the time available for establishing and expanding weak tie relationships. Number of children is an obvious factor influencing women's work time. Herberg (1970) found that for professional women social workers, as the number of children increased, the amount of time as professional worker decreased. Although Hamovitch and Morgentern (1977) found no relationship between number of children and article output among academic women, they used only full-time employed married women with Ph.D. degrees whose average number of children was 1.1. Since forty-two percent of their sample of women were single, it might be inferred that marriage/family does indeed affect available time for professional involvement for women.

It is the Level II relationship that is paramount for this study, the weak tie relationship. It includes those professional contacts who are interested in one's professional development, provide new information, become future collabora-

tors in research, and link the individual to other professionals in one's field. Interaction with a weak tie is infrequent, less than once a week, more than once a year; therefore, the possibility of expanding weak tie contacts is great. These contacts may be catalysts in career advancement, in addition to their importance in reinforcing professional identity.

Hennig (1977) describes the impact of the Level II network by shifting away from the formal structure to the informal environment of an organization and rejects the emphasis on self-improvement as the critical factor in career success. A sense of the organizational environment plays an important role in career advancement, "the informal system of relationships and information sharing, ties of loyalty and dependence, of favors granted and owed, of mutual benefit, of protection, which men unflinchingly and invariably take into account" (P12). It is this network level women find it more difficult to enter. Behymer (1974) concurs that women often perceive a sense of lack of belongingness and recognition. This is true for full-time employed women Ph.D.'s also according to Simon, Clark and Galway (1967).

Each of the remaining network levels give clues to the relative paucity of women in major universities. Level III, status quo network, are the socialization forces spoken of earlier, which impinge on women's aspirations and self-concept. Level IV network, avoidance forces producing role ambivalence and conflict in career women, are in opposition to female role changes. Such forces as the Total Woman Movement, Phyllis Schafley, the Catholic and Mormon churches take

a public stance against equal rights for women. Although Levels III and IV network influence is indirect, these forces exert ubiquitous influences on women's choices. In fact, it is only on condition that a woman can break through these control influences that a Level II professional network becomes important.

Sponsorship, inclusion in a Level II network, is operationalized in dimensions of financial support, research and publication training, placement support, and personal/emotional support. Cole and Cole (1973) single out the opportunity to become working members of collaborative research teams in early career as important in the sponsoring relationship. The young graduate student with potential, but little proven talent, is given the opportunity to work with an outstanding person in her/his field. This informal community of status elites is an important aspect of the stratification system. Evidence suggests that those who work with eminent sponsors in a field have a high probability of "making it" (Crane, 1965; Zukerman, 1967; Cole & Cole, 1973). Because of the initial advantage with position established in this phase, the probabilities of success may no longer be the same for two people of equal ability. What we may be considering here is a pattern of accumulative advantage. Thus, one may be introduced into research and network by one's sponsor which in turn encourages further research, collaboration, and grant success, which creates more visibility and inclusion in the professional mainstream.

What this study investigates is the possible relationship between sponsorship in early career and later career

success in research, specifically rate of publication, grants received, rate of collaboration, and professional network involvement, the four dependent variables.

The Sample

From nine universities, four Research I and II universities and five Comprehensive* universities in Michigan and Illinois, 250 women and men faculty members were surveyed by mailed questionnaire. In addition 25 interviews were conducted. The final yield was a sample of 133 respondents; 64 women faculty and 69 men; 84 from Research universities and 49 from Comprehensive universities of current employment. From disciplines chosen, 52 respondents are in English, 30 in Sociology and 46 in Psychology. Criteria for inclusion in the study were the following: (1) rank of assistant professor, associate professor or full professor, (2) regular full-time appointment (3) a Ph.D. degree and (4) major teaching appointment in one of the three departments above. Rank of respondents are 39 assistant professors, 41 associate professors, and 42 full professors. Age of respondents ranged from age 26 to 69. Marital Status includes 34 single respondents including those divorced, and 94 married respondents including 16 married twice and 2 married three times. On prestige of graduate school,** 84 graduated from prestige schools and 44 from non-prestige, using Berelson's top 22 graduate schools as an index. On

* Carnegie Commission Report. Classification of Institutions of Higher Education, 1973.

** Bernard Berelson. Graduate Education in the United States. New York: McGraw Hill, 1960.

years to finish Ph.D. from proposal writing stage to completion, females had a mean of 1.96 years and males had a mean of 2.24 years; on variance in years between B.A. degree and Ph.D., the mean for females was 10.7 years and the mean for males was 7.6 years. However, the real difference in the female population is between single and married women. Single women showed a mean of 6.9 years and married women a mean of 10.6 years.

Dependent and Independent Variables

Four measures of career success are used throughout this study: rate of publication over three years; grants received over three years; rate of collaboration by professional age, and professional association/publishing network involvement.

In terms of sponsorship at the graduate institution, several sets of variables were thought to influence the outcome variables. The dimensions of sponsorship are financial support, professional placement intervention, publication support, emotional encouragement, work on sponsored research, funding for dissertation research, early collaboration with senior faculty. Following the work of others, sex, type of university, Research or Comprehensive where one is currently employed, and field, humanities or social science were included in addition to the sponsorship dimensions as independent variables.

Results

The method of analysis of variance on the dependent measures by sex, type of institution of current employment, and by field (Table 1) indicates that type of institution of current employment and field play a more significant role on the career outcomes in this study than sex does. Type of institution, research or comprehensive, and field, humanities or social science show a significant effect on each outcome variable. Sex shows a significant effect on network involvement and a nearly significant effect on publication rate. This means that women faculty do publish somewhat less than men faculty and that women are not included in the networks that lead to publishing to the extent that men are; however, women faculty are as successful as their male counterparts in collaboration and in grants received over three years.

In related studies, Liebert (1977) found that sex, by itself, indicates nothing of significance for grant-getting, but that recent publication was the strongest predictor of grant success. Liebert also found that in university settings, the percentage of faculty who had grants during the 1962-73 year was 44.4. Considering that there must be some people who do not want the responsibilities that grants imply, these percentages of those who get grants could well be close to the percentages of those who want them. It might be argued that women self-select in the area of grant involvement and therefore are equally favored because all are favored.

It is not surprising that sex does affect degree of inclusion in the informal relationship of the professional associations/publishing networks. Similarly, exclusion of

TABLE 1

DISTRIBUTION OF RESPONSES ON FOUR OUTCOME MEASURES BY
SEX, INSTITUTIONAL TYPE AND FIELD
(Means and Standard Deviations)

<u>Dependent Measure</u>	<u>Sex</u>		<u>Employing Inst. Type</u>		<u>Field</u>	
	Female	Male	Research	Compre- hensive	Human- ities	Social Science
Publication Rate (over 3 yr.)	1.45(.50)	1.62(.48)ns	1.68(.46)	1.33(.47)**	1.30(.46)	1.71(.45)**
Grants Received (3 yr.)	1.34(.48)	1.33(.47)ns	1.51(.50)	1.10(.60)**	1.08(.27)	1.51(.50)**
Collaboration Rate	1.64(.48)	1.63(.48)ns	1.77(.42)	1.43(.50)**	1.22(.42)	1.92(.25)**
Network Involve- ment	1.30(.46)	1.49(.50)*	1.60(.49)	1.20(.40)**	1.22(.42)	1.55(.50)**

N = 118

ns = not significant

* = $p < .05$

** = $p < .01$

women from the informal social structures of organizations has been documented by Hennig (1977), Behymer (1974), Simon, Clark and Galway (1967). One interpretation of this finding is that women faculty are competing well with men faculty in spite of lower inclusion in the informal networks. Women may also be balancing less formal support at Level II with professional/personal support at Level I through marriage with compatible professionals. Sixty-one percent of female respondents were married to college professors while only 14.5% of the men were married to college professors. Or one might also speculate that with high inclusion in informal networks, women might have increased publication rates to equal that of the men faculty.

Looking at analysis of the sponsorship factors, there was no significant difference by sex on the important sponsorship items, financial support, work on sponsored research projects, publication training, early collaboration with senior faculty, and faculty influence on first job placement.

Significant differences in many sponsorship dimensions are attributable to field and university type of current employment. For example, on the two sponsorship items that predict most consistently three of the four dependent variables, work on sponsored research projects and collaboration with senior faculty, females and males showed only slight differences; males were favored slightly on sponsored research projects, females on collaboration. However, from the perspective of current employing institution, both females and males at research universities were sponsored on these two

items to a higher degree than those employed at comprehensive universities (Table 2). Faculty placement assistance into a research university seems to be an important factor on the research success outcomes. Prestige of the degree granting institution in this study is also significantly related to entrance into a research university on first job placement at the .05 level.

TABLE 2

DISTRIBUTION OF FACULTY ON SPONSORSHIP ITEMS BY
RESEARCH/COMPREHENSIVE UNIVERSITY OF
CURRENT EMPLOYMENT BY PERCENT

<u>Sponsorship Factor</u> N=122	<u>Research University Employment</u>		<u>Comprehensive University Employment</u>	
	<u>High</u>	<u>Low</u>	<u>High</u>	<u>Low</u>
Work on Sponsored Research Project	52.6	47.4	17.0	13.0
Early Collaboration with Senior Fac- ulty	63.0	37.0	20.0	80.0
Direct Faculty Placement on 1st Job	65.8	34.2	37.8	62.2

Field, social science or humanities, affects the four dependent variables in this study. Like institutional type, field appears as an intervening variable in research success. Social science faculty show significantly higher levels of sponsorship on major sponsorship items over humanities faculty (See Table 3). These differences are partly due to increased federal funding available for research in Social Science. A Ladd and Lipset survey of faculty

TABLE 3

DISTRIBUTION OF FACULTY RESPONDENTS ON SPONSORSHIP
ITEMS BY FIELD, BY PERCENT

<u>Sponsorship Item</u> N=122	<u>Field</u>			
	<u>Social</u> <u>High</u>	<u>Science</u> <u>Low</u>	<u>Humanities</u> <u>High</u>	<u>Low</u>
Work on Sponsored Research Projects	59.2	40.8	8.0	92.0
Early Collaboration with Senior Faculty	67.6	32.4	12.8	87.2
Direct 1st Job Assistance	65.3	34.7	42.9	57.1

relations to federal research agencies reports that 25% of faculty surveyed had one or more contacts with NSF compared to 15% of faculty who had any research contact with NEH and 6% with National Endowment for the Arts. Moreover, it is not only humanities faculty who have research ties with NEH; social scientists, professors of law, and education professors also reported research ties to the NEH (Chronicle of Higher Ed., 1977).

On direct placement assistance by faculty into research universities, males are slightly favored over females; 50% of female respondents indicated high placement support; 61.2% of the males showed high placement support. This difference is important even if not statistically significant since it seems that characteristics of the research university setting dominate professional research behavior more than do personal characteristics.

Analysis of the data to determine which elements of sponsorship predict the outcome variables, the method of least squares regression analysis (stepwise) was employed. The regression coefficients by dependent variables show the following Beta weights (reported in Table 4). Field, university type of current employment, and sex are included in the analysis since they were relatively important in earlier analysis.

On rate of publication outcome, the most important predictors by Beta weight are university type (.28), work on sponsored research project (.16), collaboration with senior faculty (.16), field (.16), and Faculty placement assistance on 1st job (.14). These factors account for .25 of the variance on this measure ($R^2=.25$).

On Grants received over three years, the most important predictors by Beta weight are university type (.23), field (.22), and work on sponsored research project (.20). These factors account for .27 of the variance on this measure ($R^2=.27$).

On the collaboration measure in later career, two factors overwhelmingly predict collaboration rate by professional age, Field shows a .58 beta weight and collaboration with senior faculty in early career a beta weight of .35. These factors account for .67 of the variance on this measure ($R^2=.67$).

For professional network involvement, sex is the strongest predictor with a beta weight of .22 followed by university type (.18) and Work on sponsored research project (.18). These factors account for .25 of the variance on

TABLE 4

REGRESSION RESULTS: BETA WEIGHTS ON DEPENDENT VARIABLES:
CORRELATES OF RESEARCH CAREER SUCCESS

<u>Independent Variables</u>	<u>Outcome Measures</u>			
	<u>Publication Rate (N=98)</u>	<u>Grants Received (N=101)</u>	<u>Collabo- ration (N=98)</u>	<u>Professional Network (N=102)</u>
Work on Sponsored Research Project Team	.16	.20	---	.18
Collaboration with Senior Faculty	.16	---	.35	---
Faculty Assistance in 1st Job Placement	.14	---	---	---
University Type	.28	.23	---	.18
Field	.16	.22	.58	---
Sex	---	---	---	.22
	$R^2 = .25$	$R^2 = .27$	$R^2 = .67$	$R^2 = .25$

this measure ($R^2=.25$).

While university type and field are the strongest predictors on these career success outcomes, early career training with collaborative teams on sponsored research projects predicts success on three of the measures also. This sponsorship factor has emerged as the strongest predictor of future research success in this study. This finding is consistent with the finding of Cole and Cole (1973) who explain that the processes at work in the stratification system are those of self-selection and social selection. Early location in the stratification system as a protegee on a collaborative research project is probably related to a number of other factors which are related to ultimate success. Inclusion in the informal structure of social relationship early in career which social selection on a faculty research project may indicate, is likely to give a person an advantage in future career because of the support and the feelings of inclusion. Because professors at major schools tend to be male, the principle of homophily or shared external and value characteristics will increase the probability that junior males will benefit over females from social selection. Given the effects of social selection, it is then difficult to separate the independent effect at this point of individual talent from the effect of unequal research opportunities.

The direction of accumulative advantage seems clear, however. From entrance into a top department, to working with members of collaborative research teams and interacting with influential and brilliant senior faculty early in career, to

placement in research universities that have greater resources and facilities, to increase in publication rates and other rewards of the profession, is the ideal track. This accumulation of advantage is not significantly different for either sex on three outcome variables related to research success in this study. However, the fourth measure, professional network involvement may be viewed as the dimension with the highest social selection component. Here women are at a disadvantage. Nevertheless, this study concludes that even with this disadvantage, women faculty are successful on these research success measures to a higher degree than was expected, if they can get the right start, and that's a great big IF.

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